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10/783,766	02/20/2004	Addison Chen	NVIDP340/P001325	6664

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EXAMINER
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HASSAN, AURANGZEB

ART UNIT	PAPER NUMBER
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2182

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/783,766

Applicant(s)

CHEN, ADDISON

Examiner

Aurangzeb Hassan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/27/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Information Disclosure Statement*

1. Applicant is reminded that an applicant's duty of disclosure of material and information is not satisfied by presenting a patent examiner with "a mountain of largely irrelevant [material] from which he is *presumed* to have been able, with his expertise and with adequate time, to have found the critical [material]. It ignores the real world conditions under which examiners work. "*Rohm & Haas Co. v. Crystal Chemical Co.*, 722 F.2d 1556 [220 USPQ 289] (Fed. Cir. 1983), *cert denied*, 469 U.S. 851 (1984). (Emphasis in original). Patent applicant has a duty not just to disclose pertinent prior art references but to make a disclosure in such way as not to "bury" it within other disclosures of less relevant prior art; See *Golden Valley Microwave Foods Inc. v. Weaver Popcorn Co. Inc.*, 24 USPQ2d 1801 (N.D. Ind. 1992); *Molins PLC v. Textron Inc.*, 26 USPQ2d 1889, at 1889 (D.Del. 1992); *Penn Yan Boats, Inc. v. Sea Lark Boats, Inc et al.* 175 USPQ 260, at 272 (S.D.Fl. 1972).

Eliminate clearly irrelevant and marginally pertinent cumulative information. If a long list is submitted, highlight those documents which have been specifically brought to applicant's attention and/or are known to be of most significance. See *Penn Yan Boats, Inc. v. Sea Lark Boats, Inc.*, 359 F. Supp. 948, 175 USPQ 260 (S.D. Fla. 1972), *aff'd*, 479 F.2d 1338, 178 USPQ 577 (5th Cir. 1973), *cert. denied*, 414 U.S. 874 (1974). But cf. *Molins PLC v. Textron Inc.*, 48 F.3d 1172, 33 USPQ2d 1823 (Fed. Cir. 1995).

Please note that it is the applicant's duty to particularly point out any highly relevance material amongst the references cited in the IDS. The examiner under the condition noted above performed a cursory review of the submitted references.

### ***Specification***

2. The disclosure is objected to because of the following informalities: DBin and DBout are not exclusively defined on page 9, lines 23 – 28. Both are defined as the width of Data Bus 310. It is unclear to the examiner how they are different by the definition listed in the specification.

Appropriate correction is required.

### ***Claim Objections***

3. Claims 1 – 13 are objected to because of the following informalities: Capitalization of words is a reserved instance in claims and improper capitalization occurs: Internal Marker/s, Buffer, Marker, Initiator Device, Block Count, Marker Offset, Buffer Count. Appropriate correction is required.

4. Claim 9 recites in the definition of the marker offset "Dbout", examiner asserts applicant to maintain consistency and make corrections to reflect "DBout" as stated initially in the claim and in the detailed description of the specification.

5. Claims 8 – 10 are objected to because of the following informalities: The acronyms identified in the claims should be accompanied by the full-text definitions at least at the first occurrence to the acronym. For example, DBin should recite Data Bus in, DBout should recite Data Bus out, MI should recite Marker interval, and ML should recite Marker Length. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-4, 6, 7 and 11 –13 are rejected under 35 U.S.C. 102(e) as being anticipated by Chadalapaka (US Patent Number 6,845,403).

8. As per claim 1, Chadalapaka teaches a method for inserting interval markers (markers at fixed intervals, column 10, lines 34 – 39) in a data stream (TCP stream, column 10, lines 34 – 39) comprised of data blocks (TCP segments, column 10, line 20, data blocks, column 11, line 24) said method comprising: a) storing data blocks in a buffer having a predetermined number registers (pre-allocated SCSI buffers, column 10,

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lines 20 – 21); b) outputting said data blocks from said buffer while counting the number of data blocks that have been stored in said registers (initiator and target are assumed to have three counters that define the allocation mechanism, column 6, lines 23 – 30); and c) inserting interval markers between said data blocks at predetermined intervals within said data stream prior to outputting said data blocks (markers placed at fixed intervals in the TCP stream, column 10, lines 34 – 39), said predetermined intervals determined in accordance with the number of data blocks counted and a desired marker interval (at fixed intervals, column 10, lines 46 – 51).

9. As per claim 2, Chadalapaka teaches a method wherein the number of said predetermined registers in said buffer is optimized to include a sufficient number of registers to receive and output data blocks, and registers for interval marker insertion (to reduce amount of temporary buffering optimized through markers to accelerate implementation, column 10, lines 34 – 39).

10. As per claim 3, Chadalapaka teaches a method wherein said storing data blocks begins upon a request for data from an initiator device (initiator submits SCSI Command with data passing from the initiator to the target, column 11, lines 21 – 23), said request including parameters which define the characteristics of said interval markers (login phase establishes session between initiator and target and sets the protocol parameters, column 11, lines 50 – 53).

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11. As per claim 4, Chadalapaka teaches a method for inserting Interval Markers into a data stream consisting of data blocks, said data stream generated in response to a request from an initiator device (initiator submits SCSI Command with data passing from the initiator to the target, column 11, lines 21 – 23),, said method comprising the steps of: a) establishing a set of parameters for said data stream upon a request from said initiator device (login phase, column 11, lines 50 – 53), said parameters including a block count value (CmdRN, column 6, lines 23 – 26), and a marker offset value indicating that interval markers are required at specified intervals within said data stream (marker indicates the offset, column 10, lines 47 – 53); b) storing said data blocks in a buffer having a predetermined number of registers; c) initializing said block count value upon receiving said request from said initiator device (InitCmdRN in the Login command, column 6, lines 45 – 49), said block count value for indicating the number of data blocks within said data stream which have been read into said registers (advanced by 1 on each command shipped, column 6, lines 25 – 26); d) initializing said marker offset value (buffer offset, column 14, lines 23 – 36) upon receiving said request from said initiator device (request to login, column 11, lines 50 – 51), said marker offset for indicating the next instance for insertion of an interval marker (buffer offset contains offset of the following data against the complete data transfer, column 12, lines 43 – 46); e) inserting interval markers between data blocks stored in said registers as specified by said parameters, and indicated by said block count value and said marker offset value (markers placed at fixed intervals in the TCP stream, column 10, lines 34 – 39); f) outputting the contents of a portion said predetermined number of registers of

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said buffer to generate said data stream, when said block count value indicates sufficient data is present in said buffer (write data PDU's column 14, lines 23 – 36).

12. As per claim 6, Chadalapaka teaches a method wherein the number of said predetermined registers in said buffer is optimized to include a sufficient number of registers to store input and output data blocks, as well as interval markers (buffer capable to handle marker size expressed in column 10, lines 46 – 65, as well as further PDU padding ).

13. As per claim 7, Chadalapaka teaches a method wherein said storing data blocks in said buffer begins upon a request for data from an initiator device, said request including parameters which define the characteristics of said interval markers (parameters defined during login the interval of the Marker, column 10, lines 53 – 65).

14. As per claim 8, Chadalapaka teaches a method wherein Buffer Count value is determined according to the relationship:  $BC = (BC + DBin)$ , wherein at the start of a transfer of data from host memory,  $BC = 0$  (counters increase by one with each command received and similarly if multiple commands received the count with increment accordingly as it is a simple adder function, column 6, lines 17 – 33).

15. As per claim 10, Chadalapaka teaches a method wherein upon insertion of an Interval Marker between data blocks (markers placed at fixed intervals in the TCP



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stream, column 10, lines 34 – 39), said Buffer Count is determined according to the relationship:  $BC (new) = (BC (old) + ML)$  (marker length is represented according to the DBin and counter increases by one with each command received and similarly if multiple commands received the count with increment accordingly as it is a simple adder function, column 6, lines 17 – 33) and the value of said Marker Offset is determined according to the relationship:  $MO (new) = (MO (old) + MI)$  (buffer offset is adjusted according to an interval as seen in the marker interval, column 14, lines 23 – 36).

16. As per claims 11, 12 and 13, Chadalapaka teaches a method for inserting interval markers in a data stream (TCP stream, column 10, lines 34 – 39) consisting of data blocks, said data stream communicated between a storage device and a storage application (initiator submits SCSI Command with data passing from the initiator to the target, column 11, lines 21 – 23),, said method comprising the steps of: a) establishing a connection between said storage device and said storage application (an iSCSI store target is a physical storage element, with an iSCSI protocol, column 2, lines 1 – 9), said connection being defined by a plurality of parameters, said parameters including the number of data blocks to be transmitted (login phase with parameters and data blocks defined, column 11, lines 50 – 53) and the desired intervals between said interval markers in said data stream (markers at fixed intervals, column 10, lines 34 – 39); b) reading said data blocks from said storage device into a buffer having a predetermined

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number of registers (pre-allocated SCSI buffers, column 10, lines 20 – 21), said data blocks read into said registers in groups of data blocks, said registers for temporarily storing said groups of data blocks (temporary buffers in place till complete segments arrive, column 10, lines 14 – 19), wherein said buffer includes sufficient registers for simultaneously storing at least first and second groups of data blocks as well as registers for storing said interval markers (blocks of data delivered in convenience to the target, column 11, lines 21 – 28); c) initializing a block count value at the beginning of said connection for counting said data blocks as they are read into said registers (InitCmdRN in the Login command, column 6, lines 45 – 49), said block count value being continuously updated to indicate how many registers in said buffer contain valid data (advanced by 1 on each command shipped, column 6, lines 25 – 26); d) initializing a marker offset value at the beginning of said connection (marker indicates the offset, column 10, lines 47 – 53), said marker offset value being continuously updated to indicate the next location for insertion of an interval marker between said data blocks within said data stream (buffer offset, column 14, lines 23 – 36); e) inserting said interval markers between data blocks stored in said registers as indicated by said block count value and said marker offset value (markers placed at fixed intervals in the TCP stream, column 10, lines 34 – 39); and f) reading said data blocks and said interval markers from said buffer for transmitting said data blocks to said storage application to generate said data stream, when said block count value indicates there is sufficient data in said registers for transmission (Read PDU's sent to the host 110, column 14, lines 37 – 52).

***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chadalapaka in view of Osman et al. (US Publication Number 2004/0024894).

19. As per claim 5, Chadalapaka teaches a method wherein said block count value is initialized with a value of zero (InitCmdRN set to zero, column 6, lines 45 – 49) and is incremented to count data blocks while storing data blocks in said buffer (advanced by 1 on each command shipped, column 6, lines 25 – 26).

Chadalapaka fails to teach a method wherein said block count is decremented as data blocks are read out of said buffer.

Osman et al. teaches a method wherein said block count is decremented as data blocks are read out of said buffer (decrement event count, element 604, figure 6).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system of Chadalapaka with the above teachings of Osman et al. One of ordinary skill in the art at the time of the applicant's invention would have been motivated to make such modifications in order to maintain iSCSI

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protocol by which SCSI messages are encapsulated in TCP protocol (paragraph [0029]) therefore allowing for tracking of flow to prevent underflow/overflow in the memory buffer of the system (paragraph [0117]).

20. Chadalapaka as modified by the teaching of Osman above as per claim 5, Osman teaches in regards to claim 9, a method wherein said marker offset value is initialized with a value of zero and wherein if data is read out of said buffer, the value of said buffer count is determined according to the relationship:  $BC(\text{new}) = (BC(\text{old}) - \text{DBout})$ , and the value of said marker offset is defined as  $MO(\text{new}) = (MO(\text{old}) - \text{DBout})$  (when decrementing a counter for each event subtracted is reduced by 1 and accordingly BC and MO represent event decrementing, paragraph [0117], element 604, figure 6).

### ***Conclusion***

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The IP Storage Working Group's Internet Draft of the iSCSI standard is listed as pertinent prior art as expresses definition of the iSCSI protocol with fixed insertion of markers

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aurangzeb Hassan whose telephone number is (571)272-8625. The examiner can normally be reached on Monday - Friday 9 AM to 5:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on (571)272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AH  
4/21/2004



**KIM HUYNH**  
**SUPERVISORY PATENT EXAMINER**

5/4/06